



INDIAN SCHOOL MUSCAT

SECOND PERIODIC TEST

MATHEMATICS

CLASS: XI

Sub.Code: 041

Time Allotted: 50mts.

19 .11.2023

Max .Marks: 20

Roll no : Name of the Student : section :

GENERAL INSTRUCTIONS:

- (i) This question paper consists of 10 questions. All questions are compulsory.
- (ii) Questions 1 – 3 are MCQ and 4th Assertion and Reasoning carrying 1 mark each.
- (iii) Questions 5 – 7 carry 2 marks each.
- (iv) Questions 8 – 9 carry 3 marks each.
- (v) Question 10 is Case Based Question; internal choice is given in 3rd sub question (attempt any one)

SECTION :A

1. The geometric mean of 2 and 8 is
a) 6 b) 16 c) 5 d) 4
2. The n^{th} term of a GP 5 , 25 , 125 ,...is
a) 5^n b) 5^{n-1} c) 5^{n+1} d) 5^{n-2}
3. A coin is tossed three times, consider the following events

A : no head appears

B : exactly one head appears

C : at least two head appears

Then,

- a) A, B and C are mutually exclusive events.
- b) A, B and C are exhaustive events.
- c) only (a).
- d) both (a) and (b).

4. ASSERTION-REASON BASED QUESTIONS

In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (a) Both A and R are true, and R is the correct explanation of A.
- (b) Both A and R are true, but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

Assertion (A) : If n^{th} term of a sequence is $a_n = 4n - 3$. Here a_{17} and a_{24} are 65 and 93 respectively

Reason (R) : If n^{th} term of a sequence is $a_n = (-1)^{n-1}n^3$. Here, 9th term is 729.

SECTION : B

- 5. Tickets numbered from 1 to 20 are mixed up together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 3 or 7?
- 6. If x , $2y$ and $3z$ are in AP, where the distinct numbers x , y and z are in GP, then find the common ratio of GP.
- 7. Insert 6 numbers between 3 and 24 such that the resulting sequence is an AP.

SECTION : C

- 8. The sum of first three terms of a GP is $\frac{13}{12}$ and their product is -1. Find the common ratio and the terms.
- 9. Two sections of 20 and 30 students are formed out of 50 students. If A and B are two friends among 50 students, then what is the probability that
 - (i) A and B enter the section
 - (ii) A and B enter the different section

SECTION : D

- 10. On her vacation, Sonia visits four cities A, B, C and D in a random order.



On the basis of the above information, answer the following questions

- (i) What is the probability that she visits A first and B last?
- (ii) What is the probability that she visits A either first or second?
- (iii) What is the probability that she visits A just before B?

OR

- (iii) What is the probability that she visits A before B?



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SECTION :A

1. The geometric mean of 4 and 16 is
a) 64 b) 8 c) 20 d) 12
2. The n^{th} term of a GP 6, 36, 216, ... is
a) 6^n b) 6^{n-1} c) 6^{n+1} d) 6^{n-2}
3. A coin is tossed three times, consider the following events

A : no head appears

B : exactly one head appears

C : at least two head appears

Then,

- a) A, B and C are mutually exclusive events.
- b) A, B and C are exhaustive events.
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Assertion (A) : If n^{th} term of a sequence is $a_n = 4n - 3$. Here a_{17} and a_{24} are 65 and 93 respectively

Reason (R) : If n^{th} term of a sequence is $a_n = (-1)^{n-1}n^3$. Here, 9th term is 729.

SECTION : B

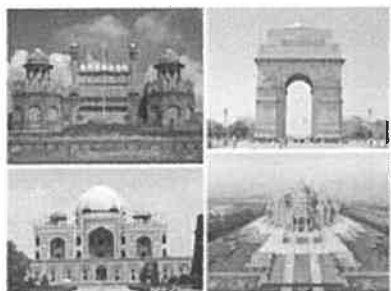
- 5. Tickets numbered from 1 to 20 are mixed up together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 4 or 5?
- 6. If x , $2y$ and $3z$ are in AP, where the distinct numbers x , y and z are in GP, then find the common ratio of GP.
- 7. Insert 6 numbers between 6 and 27 such that the resulting sequence is an AP.

SECTION : C

- 8. The sum of first three terms of a GP is $\frac{39}{10}$ and their product is 1. Find the common ratio and the terms.
- 9. Two sections of 20 and 30 students are formed out of 50 students. If A and B are two friends among 50 students, then what is the probability that
 - (i) A and B enter the section.
 - (ii) A and B enter the different section.

SECTION : D

- 10. On her vacation, Sonia visits four cities A, B, C and D in a random order.



On the basis of the above information, answer the following questions

- (i) What is the probability that she visits A first and B last?
- (ii) What is the probability that she visits A either first or second?
- (iii) What is the probability that she visits A just before B?

OR

- (iii) What is the probability that she visits A before B?



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SECTION :A

1. The geometric mean of 5 and 125 is
a) 625 b) 25 c) 130 d) 120
2. The n^{th} term of a GP 4, 16, 64,...is
a) 4^n b) 4^{n-1} c) 4^{n+1} d) 4^{n-2}
3. A coin is tossed three times, consider the following events

A : no head appears

B : exactly one head appears

C : at least two head appears

Then,

- a) A, B and C are mutually exclusive events.
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Reason (R) : If n^{th} term of a sequence is $a_n = (-1)^{n-1}n^3$. Here, 9^{th} term is 729.

SECTION : B

- 5. Tickets numbered from 1 to 20 are mixed up together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 2 or 7?
- 6. If x , $2y$ and $3z$ are in AP, where the distinct numbers x , y and z are in GP, then find the common ratio of GP.
- 7. Insert 6 numbers between 9 and 30 such that the resulting sequence is an AP.

SECTION : C

- 8. The sum of first three terms of a GP is $\frac{21}{2}$ and their product is 27. Find the common ratio and the terms.
- 9. Two sections of 20 and 30 students are formed out of 50 students. If A and B are two friends among 50 students, then what is the probability that
 - (i) A and B enter the section.
 - (ii) A and B enter the different section.

SECTION : D

- 10. On her vacation, Sonia visits four cities A, B, C and D in a random order.



On the basis of the above information, answer the following questions

- (i) What is the probability that she visits A first and B last?
- (ii) What is the probability that she visits A either first or second?
- (iii) What is the probability that she visits A just before B?

OR

- (iii) What is the probability that she visits A before B?

END OF THE QUESTION PAPER

